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THE COMMON POLICY IN SCIENCE AND TECHNOLOGY PRIORITIES AND ORGANIZATION

(Communication from the Commission to the Council)

COM(80) 412 final

The Communication

Annex - The Report

- I. CONCENTRATION OF COMMUNITY PROGRAMMES
 1. Areas of foremost priority within the sectors of priority interest
 2. Concentration of programmes on areas of foremost priority
 3. Other areas, new areas, long term priorities
- II. POSSIBILITY OF A MULTIANNUAL FRAMEWORK PROGRAMME FOR INDIRECT AND CONCERTED ACTIONS
 1. The multi-programme approach
 2. The relationship between indirect and concerted action research programmes and other R&D activities
- III. RATIONALIZATION OF STRUCTURES FOR THE PREPARATION, EXAMINATION AND IMPLEMENTATION OF COMMUNITY PROGRAMMES
 1. Introduction
 2. Grouping of indirect and concerted action programmes
 3. Sliding R&D programmes
 4. Possibilities for the rationalization of the advisory system
 5. Simplification of the contract procedures
- IV. INVOLVEMENT OF THE JRC IN THE MANAGEMENT OF CERTAIN INDIRECT ACTIONS
 1. The close links between direct and indirect action
 2. Involvement of the JRC in the management of indirect action projects
 3. Relationships between the JRC and DG XII

Note 1 - References to policy statements

Note 2 - List of Advisory Committees

Table 1 - List of Community R&D appropriations

Table 2 - List of indirect and concerted actions

Table 3 - List of R&D Community programmes

Communication to the Council in response to its request of 20th December 1979

The purpose of this document is to give the Commission's reply to the Council, following its request at its meeting in Luxemburg on 21st October 1979, as recorded in the conclusions adopted on 20th December 1979, for a report with proposals in the first part of 1980 on "a number of ways in which the Community efforts in R&D could be made more dynamic".

After comparing national policies, the Council "stressed the importance of defining Community R&D activities with due regard to national R&D policies and to the aims of other sectoral policies at national and Community levels. In this context, the following sectors were, in particular, identified as of priority interest for the next phase of the Common Policy: energy, raw materials, environment, agriculture and certain industrial R&D".

The specific points on which the Council requested a report with proposals in the light of the Council discussions are:

- " a) The concentration of Community programmes on areas of foremost priority: this is not to exclude a priori other areas where a Community contribution could be of particular value for the Community.
- b) The possibility of setting Community indirect and concerted action programmes in the context of an appropriate multiannual framework.
- c) The rationalization of structures for the preparation, examination and implementation of Community R&D programmes.
- d) Involvement of the Joint Research Centre (JRC) in the management of certain indirect action projects in specific sectors where the JRC is already deeply involved with direct action projects. "

At the annex to this communication will be found the Commission's detailed report on these four points. In general the Commission was guided by the principle of not introducing changes too quickly in order to avoid disturbing a system developed over a number of years which works well although there is, of course, a need for improvement. The Commission was also anxious to retain and even improve the flexibility inherent in the present system which is well suited to a developing R&D policy.

This communication will be followed by a further communication later in the year covering the other matters on which the conclusions agreed on 20th December 1979 require action by the Commission.

The conclusions of the report and the proposals called for by the Council are as follows. The points refer, for the most part, to research carried out under the European Economic Community and Euratom Treaties. Research under the European Coal and Steel Community Treaty is subject to its own special procedures.

a) Concentration of Community programmes on areas of foremost priority

The Commission proposes that, for the period 1981-1985, approximately 90% of total Community R&D expenditure shall be devoted to the five sectors of priority interest identified by the Council and about 80% to certain areas of foremost priority within these sectors set out in the attached list.

b) The possibility of setting Community indirect and concerted action programmes in an appropriate multiannual framework

The Commission proposes a grouping of indirect and concerted action programmes into sectoral programmes as a first step towards a multiannual indicative framework programme. The Commission envisages that this might be developed later into a more comprehensive indicative multiannual framework programme which would show not only the indirect and concerted action programmes but also the direct and other Community R&D programmes.

The Commission proposes that the multiannual indicative framework programme should include not only the sectoral groupings of approved programmes but also the forecasts of the Commission as to subsequent programmes and new programme proposals thus enabling the Council to have an overall view of the amounts likely to be required for financing and staffing for a four or five year period ahead.

c) Rationalization of structures

The Commission proposes that the grouping will itself assist in the rationalization of structures; it will, most important, substantially reduce the number of separate Council decisions needed, probably by a half.

The Commission proposes to introduce sliding programmes to improve the efficiency of the transition from any multiannual programme to its successor when an extension is justified.

With regard to the consultative system, the Commission proposes a degree of rationalization which should reduce the number of meetings and the size of attendance at some of them.

The Commission has reviewed its internal procedures. In the interest of efficiency, simplified contract procedures will now apply to the smaller contracts.

d) Involvement of the JRC in the management of certain indirect action projects

The Commission proposes certain measures to ensure that those concerned at the JRC and in DG XII with related direct and indirect action programmes have a thorough knowledge and understanding of research progress and problems of mutual interest. In areas of research where there are both direct action projects (with deep involvement by the JRC) and indirect action projects, the JRC already plays an important part in the management of the indirect action programmes. This will continue.

The Council is invited to take note of this communication and the proposals of the Commission contained within it in answer to its request of 20th December 1979.

LIST OF AREAS OF FOREMOST PRIORITY

ENERGY:

- energy conservation
- nuclear energy-fission
 - safety
 - back end of the fuel cycle
 - radiation protection
- nuclear fusion as a new energy source
- renewable sources of energy
 - solar energy
 - geothermal energy
- synthetic and substitute fuels
 - coal gasification
 - hydrogen
 - biomass
- coal - improved exploration and exploitation
- hydrocarbons - exploration and exploitation

RAW MATERIALS:

- development and use of indigenous renewable and non-renewable resources (including uranium)
- resource recovery from waste (secondary raw materials)
- raw material substitution

ENVIRONMENT:

- environmental protection
 - behaviour and effects of pollutants in the environment
 - reduction and prevention of pollution, clean technologies
 - conservation and management of the natural environment
- climatology
 - mechanism of climate
 - man-climate interactions (in particular the CO₂ problem)
- biology - radiation protection

AGRICULTURE:

- efficient utilization of land and water resources
- reduction of the consumption of energy in agriculture
- improvement of animal and plant production
- Mediterranean agriculture
- bio-technologies (agricultural applications)

INDUSTRY R&D:

- new information technologies
- bio-technologies (industrial applications)
- steel research

REPORT TO THE COUNCIL IN RESPONSE TO ITS REQUEST OF 20th DECEMBER 1979

I. CONCENTRATION OF COMMUNITY PROGRAMMES

1. AREAS OF FOREMOST PRIORITY WITHIN THE SECTORS OF PRIORITY INTEREST

The sectors of priority interest identified by Ministers and recorded in the conclusions adopted on 20th December 1979 are:

- ENERGY
- RAW MATERIALS
- ENVIRONMENT
- AGRICULTURE
- and certain INDUSTRIAL R&D

These are very large sectors. It is clear from the statements of Ministers at the Council (Research) at Luxemburg on 21st October 1979, from the aims of the sectoral policies of the Community (see List of references in Note I) and from the objectives of the Member States that within these large sectors some research areas must be given and indeed are given higher priority than others. This is what the Commission understands that the Council meant when, having identified the five sectors of priority interest, it went on to ask the Commission to report on the concentration of Community programmes on "areas of foremost priority".

The Commission has, accordingly, undertaken the task of identifying these areas of foremost priority all, of course, lying within the sectors of priority interest identified by the Council. They are set out in a list attached to the communication above. It should be noted that all these areas are of foremost but equal priority. Within each sector, the areas identified should not be regarded as, themselves, being in any order of priority.

2. CONCENTRATION OF PROGRAMMES ON AREAS OF FOREMOST PRIORITY

Because this list of areas of foremost priority stems from stated policies it is not surprising that an analysis of appropriations for Community R&D shows that the concentration asked for by the Council already exists to a major degree.

This is shown in Table 1 which gives the figures for 1979*. It gives the percentage of total Community R&D expenditure devoted to each of the five priority sectors identified by the Council. It then goes further and shows how much goes to the areas of foremost priority both as a percentage of total R&D expenditure and as a percentage of the total amounts devoted to the five priority sectors.

This Table demonstrates clearly that the Commission is completely committed to concentrating its R&D effort on these five sectors of priority interest (93.5%); and it shows further that, in 1979, within these sectors about 90% went to the areas of foremost priority. Thus more than 80% was devoted to the areas of foremost priority set out above and well under 20% to other areas of Community interest, some within the five priority sectors and some outside them.

But the Table also demonstrates the big differences in the expenditure between the sectors of priority interest with energy clearly taking the largest share by a very large margin. It should, however, be underlined that the relative priority of sectors or areas cannot be judged on the basis of budgetary figures only. There are two main reasons for this. The first is that the quantity of money which will, in absolute terms, have a significant research impact differs very much from one sector to another - for example, to secure a major step forward in nuclear technology costs many times more than an equally significant step forward in agriculture research. The other reason is that expenditure from the Community budget depends greatly on the type of research, i.e. indirect, direct or concerted action. It is the Commission's intention to use the different forms of

* The figures relate to R&D only and exclude, e.g. demonstration projects in the field of hydrocarbons.

action as possible in order to achieve the best possible results making use of the funds available in the most effective way. It should also be noted that the 1979 figures must not be interpreted as though they conformed to a rigid plan. Community research must remain flexible and be capable of adaptation to actual needs, problems and opportunities.

3. OTHER AREAS, NEW AREAS, LONG TERM PRIORITIES

The Commission will maintain this concentration on areas of foremost priority but in line with the Council conclusions, ("not to exclude a priori other areas where a Community contribution could be of particular value for the Community"), it will devote a certain proportion of its research effort to other major areas of Community interest including, inter alia, medical research, Community Bureau of Reference, applied metrology, fisheries research, textile research, transport research and social research.

Apart from the questions dealt with in this paper, the Council has also asked the Commission to assess the possible impact of Community R&D on horizontal policies such as regional policy, future structural economic and industrial policy, with particular reference to small and medium size industry and policies of aid to the developing countries; it has also asked the Commission to look at possible means and ways to increase mobility of researchers in the Community. Work is proceeding in all these areas and the Commission will in due course submit proposals or reports in these areas. It cannot be excluded that the relative proportion of the money devoted to priority areas indicated by the Council will change as a consequence.

It is expected, moreover, that by the end of 1982 the work of FAST will indicate long term priorities for Community R&D. This too could result in a change in priorities and, if successful, FAST could later contribute constructively to a continuous dialogue on the areas of priority interest for Community research which would result in further changes as time goes on.

But these changes will take a long time to take effect and the Commission expects that, for the period 1981-1985, roughly 80% of its total research financial resources will continue to be deployed on the areas of foremost priority set above.

II. POSSIBILITY OF MULTIANNUAL FRAMEWORK PROGRAMME FOR INDIRECT AND CONCERTED ACTIONS

1. THE MULTI-PROGRAMME APPROACH TO AN INDICATIVE MULTIANNUAL FRAMEWORK PROGRAMME

As a first step towards a multiannual framework programme for indirect and concerted actions, the Commission envisages grouping some of them into sectoral programmes. This grouping would also have as one of its results a measure of rationalization of the structures for the preparation, examination and implementation of Community R&D programmes which are considered in Chapter III.

The central idea is to group some of the indirect and concerted actions by field of activity. Each of these fields would in due course have a multi-annual programme to itself and be the subject of a single Council decision.

Table 2 shows the proposed scheme for grouping. The logic of the arrangement is clear. A major consequence is the reduction by a half of the number of separate Council decisions required. This would be a major step forward in the direction of rationalizing the structures and procedures related to indirect and concerted action programmes.

The grouping will start with the environmental sector in 1980 and should be accomplished for all sectors envisaged by 1984-1985. The Council could thus be presented with a multiannual framework programme covering all indirect and concerted actions, this being, in effect, the sum of the sectoral groupings. But since, on average, only about a quarter of the whole will be starting in any particular year a multiannual framework programme will need to include not only the sectoral groupings of approved programmes but also the forecasts of the Commission as to follow-on programmes and new programmes proposals which the Commission will prepare for submission to the Council in the course of the subsequent 3-4 years. If these forecasts of the Commission are added to the programmes already approved, the Council could take note of the total amounts likely to be required for financing and staffing for any four or five

year period ahead. There would thus have been created a multiannual framework programme of an indicative character covering all indirect and concerted actions whether approved or merely planned or foreseen by the Commission. This would give a good basis for forward planning by the Council but the multiannual framework programme will be of a character such that the flexibility needed to respond quickly to changing and unforeseen situations will not be impaired.

2. THE RELATIONSHIP BETWEEN INDIRECT AND CONCERTED ACTION RESEARCH PROGRAMMES AND OTHER R&D ACTIVITIES

The indirect and concerted action programmes need to be viewed together with other Community R&D activities in the same or related fields. These activities include direct action, activities under the ECSC Treaty, and research activities in certain industrial areas as well as in the agricultural field which are conducted under the EEC Treaty but which for one reason or another do not follow the indirect action or concerted action patterns of decision and implementation.

Table 3 puts current indirect and concerted action programmes together with the other Community activities and classifies them according to objectives and modalities. It thus gives a full view of the relationship between those activities, the co-ordination of which is carried out by the Commission.

It points the way to the possible inclusion of direct action together with indirect and concerted action in a multiannual framework programme and, perhaps, ultimately also the association of the remaining Community activities in the field of science and technology.

III. RATIONALIZATION OF STRUCTURES FOR THE PREPARATION, EXAMINATION AND IMPLEMENTATION OF COMMUNITY PROGRAMMES

1. INTRODUCTION

The "preparation, examination and implementation of Community programmes" involve a large number of steps and procedures. The Commission has examined these and, for the purpose of this report, has selected four. They have been chosen because they are within the Commission's competence and they are items on which improvement seems possible.

The four issues selected are:

- a) The rationalization of the examination and implementation of Community programmes by grouping of indirect and concerted actions.
- b) The introduction of sliding programmes in order to avoid sterile periods of interruption between one expiring programme and its extension and in order to make the evaluation of the research work within the programmes part of a continuing process.
- c) The possibility of rationalizing the consultative system.
- d) The possibility of simplifying the contract procedure.

2. GROUPING OF INDIRECT AND CONCERTED ACTION PROGRAMMES

This concept has already been described and the proposed scheme as set out in Table 2 presented in the context of the Commission's ideas for an appropriate multiannual framework programme. This grouping of Community R&D actions should lead to a streamlining of procedures for the adoption of programmes and will certainly reduce the number of separate Council decisions needed.

It is also hoped that this will contribute to the overall efficiency of R&D at Community level and also at national level in the designated sectors through a better co-ordination of national efforts at Community level.

This grouping of Community indirect and concerted actions would also have the following effects:

- There would result a greater transparency, for the Member States, for the European Parliament and for other interested bodies, of the whole Community R&D effort in terms of:
 - the objectives of each sectoral programme.
 - the place and function of each sectoral programme as a basic unit of the overall indirect and concerted action R&D effort of the Community.
 - the extent of the resources (funds and staff) allocated to R&D for each sector.
- The decision-making process for the adoption of R&D programmes would be considerably simplified as fewer decisions would be required by the Council.
- A greater management flexibility could be made possible for the adaptation of research to changing needs in a given sector during the span of a single programme including, where desirable, the replacement of one activity by another.
- The advisory system could be simplified to some extent.

The hope is that the grouping will initiate a welding-together of separate programmes into new more co-ordinated and concentrated units. This will rationalize structures and procedures and will simplify decision-making. It will, however, impose greater demands than at present on the Commission staff in the preparation of R&D programmes, in the negotiations leading to their adoption, in their management and in the evaluation of their results.

3. SLIDING PROGRAMMES

The concept of sliding sectoral programmes refers to an overlapping sequence of multiannual programmes in which a four-year or five-year programme is replaced by a new four-year or five-year programme from the start of the original programmes's fourth or fifth year. Thus the last year of any sectoral programme takes the place of the first year of its successor. This does not mean an automatic extension of programmes but it is a more satisfactory method of proceeding than that employed at present for those cases where there is a need for a follow-on programme.

The aims of a sliding programme are:

- To ensure the continuity of the Community indirect/concerted action in a given sector.
- To avoid disruptive gaps in financial support for the contractors which result from delays in reaching decisions.
- To provide a smooth mechanism (better than the procedure of programme revision) for the adaptation of programmes to changing needs in terms of:
 - scientific and technical content.
 - level of funding.
 - changes based on a detailed and timely evaluation of the results of preceding programmes.

A sliding programme means that there is a need to initiate and complete programme adoption procedures every four years (for a five-year programme) and certain additional provisions will have to be arranged in budgeting commitment and payment appropriations during the overlap period. The recent decisions on fusion and on the JRC programme have shown, however, that these problems can be dealt with without difficulty. In the view of the Commission, there would be more benefits than inconveniences to be expected for most, if not for all, indirect and concerted action programmes if a sliding programme procedure were introduced.

The diagram shows the sequence of action involved for five-year programmes. Preparation for the following programme would be based on knowledge of the progress of the current programme and where programmes are renewed for a third time also on the evaluation of the first programme.

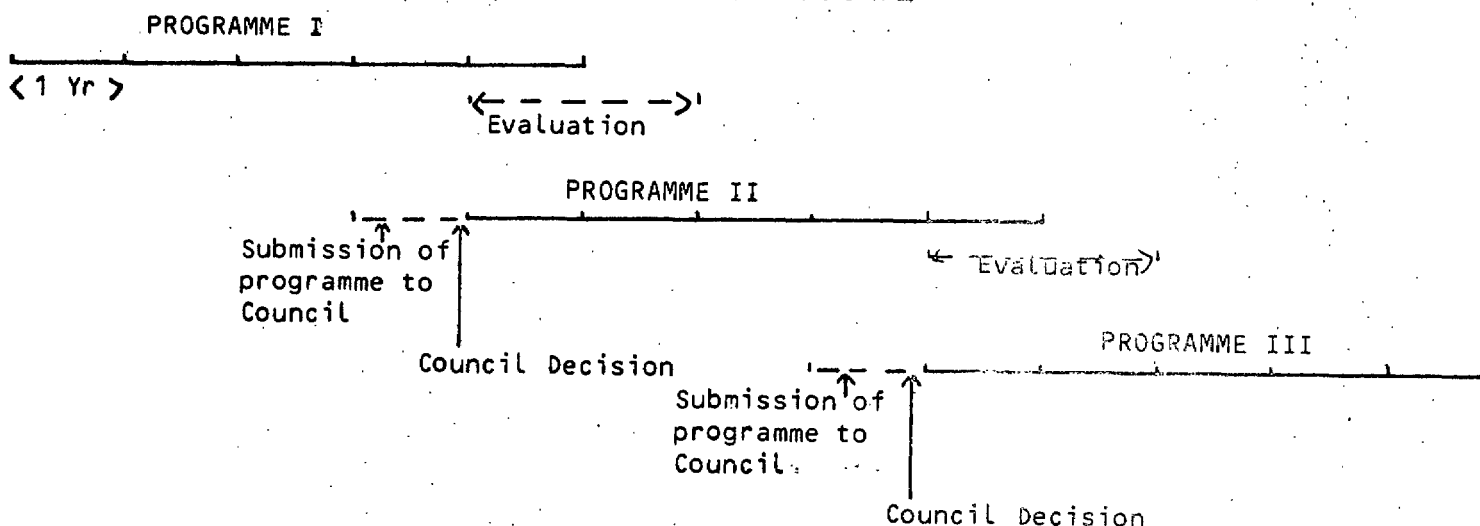
Submission of the new programme would be made by the Commission to the Council in the first half of the fourth year and the Council decision would be taken during the second half of the fourth year of each programme in good time for the new programme to start on the 1st January of the following year and corresponding to the last year of the earlier programme.

For a four-year programme, the arrangements would be similar. The experience of the JRC can be drawn upon in this respect.

There might also, in the case of certain five-year programmes, be advantage in a two-year rather than a one-year overlap. The Commission proposes to consider such two-year overlap arrangements in the light of experience.

In conclusion, the Commission proposes that, in future,:

- 1) Indirect/concerted actions should in general be programmed for four or five years.
- 2) New programmes should be adopted with a year's overlap with the preceding ones.
- 3) Programme revisions should be abandoned, as they will be effectively replaced by evaluation and preparation of overlapping programmes.



4. POSSIBILITIES FOR THE RATIONALIZATION OF THE ADVISORY SYSTEM

1. THE ADVISORY SYSTEM

Note 2 gives a list of advisory bodies, their functions and the sectors to which they relate. It will be seen that there is a very wide range of functions which require that the composition, terms of reference and roles should vary and not follow a standard pattern. There are two main categories - policy level committees and implementation level committees.

2. POLICY LEVEL COMMITTEES

In order to assist the Commission in the formulation of a common science and technology policy and to advise it on research areas where joint action at Community level is appropriate, the two general policy oriented committees CERD and CREST are both essential advisory bodies.

CERD provides advice from high level independent scientific experts. The Commission has found CERD to be extremely useful in the development of its proposals particularly on general and wide-ranging policy issues such as the formulation of the first guidelines on a common policy in the field of science and technology and the elaboration of the second guidelines.

CREST, on the other hand, advising both the Commission and Council, plays a central role in defining policy and in providing a means for valuable dialogue between responsible high officials of the Community and of the Member States. This dialogue is essential to ensure that common research programme proposals elaborated by the Commission reflect the needs and priorities of Member States and that eventual research results make an effective contribution to the social and economic development of the Community. It is equally important in the contribution it makes in respect of the mandate, given to the Community in the Council Resolution of 14th January 1974, for co-ordinating national research and technology policies. CREST, together with its subcommittees, in areas of co-ordinating policies and of defining programmes, has amply demonstrated its major importance to both the Commission and the Council.

In the field of agriculture, the Standing Committee on Agricultural Research similarly plays a major part in the co-ordination of national policies and the development of Community research programmes.

The Scientific and Technical Committee has a particular mandate in advising the Commission in the nuclear field. It is unique among the policy level advisory bodies in that it owes its special status to the fact that it is set up under the direct authority of Article 134 of the Euratom Treaty.

3. IMPLEMENTATION LEVEL COMMITTEES

The Commission is assisted in the management of Community indirect and direct action research programmes by Advisory Committees on Programme Management (ACPM) (or for concerted actions by Concerted Action Management Committees (COMAC)).

The Council Resolution of 18th July 1977 put the ACPM system

on a firm basis and the COMACs have been similarly endorsed through various individual concerted action decisions. These committees have proved to be of paramount importance in assisting the Commission in running and co-ordinating its R&D programmes for direct, indirect and concerted actions. They enable the Commission to take benefit of the extensive technical and scientific expertise which exists in Member States in order to ensure that Community research activities are managed effectively. This is important in particular for the selection of proposals and most appropriate laboratories, for the review of the progress of work, for the evaluation of results and for advising on draft proposals for future indirect action research programmes.

These committees, moreover, have an essential role to play in providing liaison between programmes at Community level and corresponding R&D work in the Member States which is nationally financed. Such liaison enables Community research to implement effectively national research activities and avoid unnecessary duplication.

4. AREAS FOR IMPROVEMENT

The Commission is aware of the heavy administrative burden that the number of committees places on the services of the Commission and on Member States who are required to nominate experts to these committees.

Major changes to the functions and number of advisory committees, particularly regarding the ACPMs and COMACs, are not possible, however, without jeopardizing the value of the contribution made by these committees. Any major reduction in their number would seriously affect the quality of the advice emanating from these sectoral committees. A reduction will necessarily result in increasing the scope and areas of responsibility of the remaining committees and would consequently deprive the Commission of the benefit of the specialized technical expertise which is so important for the smooth running of the programmes.

The Commission has made or proposed a number of changes which will assist towards rationalizing the system. These include:

- The Commission's communication to the Council of 19th December 1979 (COM(79)771) made proposals for a new advisory structure for the Community's fusion programme which will combine the advisory functions of three existing committees (the Consultative Committee for Fusion, the Liaison Group and the Committee of Directors) into one new committee to be called the Consultative Committee of the Fusion Programme.
- The number of specialized and ad hoc working groups of the CREST-CRM subcommittee has been reduced from seven to four while the number of working groups assisting the STIDC have been reduced from ten to five.
- Rather than creating a new ACPM, the advisory function concerning the management of the programme on Codes and Standards for Fast Reactors has been entrusted to the existing Fast Reactor Co-ordinating Committee.
- The idea of creating a CREST-Environment subcommittee will be considered in the light of progress on the Commission's Third Environmental Research Programme. This concept would contribute to streamlining the existing

advisory structure, giving CREST subcommittees a more pronounced role in sectoral policy orientation and co-ordination.

In addition,

- The Commission will examine the possibility of reducing the number of advisory committees and sub-groups (whenever this appears compatible with the degree of specialization required), particularly in the context of its measures aimed at grouping Community research programmes.
- The Commission is attempting to reduce the number of meetings of these committees through more efficient preparation and organization of meetings.
- Efforts will be made to reduce the number of members attending each meeting by trying to see that the experts present are those who are most competent to deal with the subject under discussion and are kept to a minimum. This will of course mean that great care on the part of the Member States in designating experts will be even more important than before. Reductions in numbers, however, must not affect the value and quality of the specialist advice which is the basis of the creation of the committee.
- The Commission will continue to examine at appropriate occasions the functioning and composition of individual committees to ensure that they are effectively fulfilling the advisory role in the most efficient way.

5. SIMPLIFICATION OF THE CONTRACT PROCEDURES

The Commission is also reviewing its own internal procedures to see whether ways and means can be found of simplifying them, speeding them up and generally improving the efficiency of the processes of developing R&D programmes and putting them into effect.

The contracts system presents special problems. The staff is limited in number, the total number of separate contracts is large and increasing; yet there is a constant need for vigilance and care in the negotiation, placing and monitoring of contracts since the Commission itself and of course the

Member States, the Parliament and the Cour des Comptes are constantly anxious to see that money is well and correctly spent.

The Commission has nevertheless recently found it possible to simplify the management of shared cost research contracts in the interests of improving overall efficiency. There will be a degree of relaxation of the inspection procedures applied to the accounts of the contractors for smaller contracts. The degree of relaxation will depend on the size of the contract.

IV. INVOLVEMENT OF THE JRC IN THE MANAGEMENT OF CERTAIN INDIRECT ACTIONS

1. THE CLOSE LINKS BETWEEN DIRECT AND INDIRECT ACTION

It has been a consistent objective of the Commission over many years to ensure close links between direct and indirect action. These links are needed and have been established at all levels - from the definition of the programmes themselves to the execution of the programmes and finally to their assessment and the exploitation of their results.

At the stage of the execution of the programmes, there are two main concerns:

- a) to assure optimum co-ordination and flow of information on the research in progress;
- b) to assure the maximum use of the experience and scientific knowledge available, i.e. the optimum use of manpower.

In respect of these two aspects, reference may be made to Table 3 which shows clearly the research programmes in which there is both indirect action and the deep involvement of the JRC in direct action.

These programmes are:

- solar energy and hydrogen production
- reactor safety and the management of radioactive waste
- nuclear fusion (fusion reactor technology)
- environmental protection

For all these programmes there are single ACPMs (or, in the case of Fusion, the ACFP). The ACPMs are responsible for advising the Commission on the management of both the indirect and the direct actions. The preparation and follow-up of the meetings of these ACPMs by Commission personnel encourage regular contacts between the personnel of the JRC and those of DG XII who are entrusted with the management of the relevant direct or indirect actions. These contacts ensure reciprocal transfers of information during the progress of the research and a full interchange of management experience. It is also the practice in these programmes for JRC staff to be involved in the regular meetings with the contractors carrying out the indirect action work.

Apart from these formal relationships, there are also personal contacts, frequent contacts at the scientific level and a constant flow of reports.

2. INVOLVEMENT OF THE JRC IN THE MANAGEMENT OF INDIRECT ACTION PROJECTS

The principal management tasks for indirect action projects are the preparation of the call for bids, the evaluation of the bids received, the negotiation of contracts, the co-ordination of the work, the oversight of the progress of the work carried out under contract, reporting, evaluation of results and, combining many of these activities, the task of acting as project leader. In respect of most of these management functions, the existence of a single ACPM for the direct and indirect action ensures substantial participation by the JRC in the management of the indirect action. In relation to the evaluation of bids and the oversight and evaluation of the work, JRC staff bring with them their specific scientific and technical expertise and this is frequently called upon also by DG XII personnel on an ad hoc and day-to-day basis. The strong personal links which have been built up over the years ensure that the services of the JRC in this respect are called upon frequently by DG XII personnel. The fullest involvement is achieved when the task of project leader is assigned to someone from the JRC. The project leader task has been entrusted to JRC personnel in the cases of solar collectors, solar power plants and thermochemical hydrogen production. In a number of other sectors, notably radioactive waste management and environmental research, JRC personnel participate in (and sometimes chair) specialized working groups related to particular themes. In the case of the large and important Fusion programme the whole of the JRC programme is integrated into the single operational structure.

3. RELATIONSHIPS BETWEEN THE JRC AND DG XII

From time to time joint hearings take place at which the technical and management personnel from the JRC and from DG XII are able to interchange information and to review relevant problems. It is the intention of the Commission to develop this type of meeting on a regular basis.

Furthermore, the new 1980-83 programme of the JRC includes a new line (E6) for scientific and technical support of the JRC to the other services of the Commission. More specifically it includes a sub-line for technical assistance including assistance for the management of projects carried out in the framework of indirect action; the equivalent of 9 men is to be devoted each year to this task. When the Commission requested the approval of the Council for this new programme, it was specified that the personnel whose service would be called for under this heading should devote a maximum of 30% of their time to these tasks while their main function would continue to be exerted within the JRC scientific programme framework. This collaboration between direct and indirect action is thus designed to make the maximum use of the scientific and technical knowledge, maintained by continuing research work, at the JRC. The Commission considers that the kind of involvement which now exists through participation of JRC personnel in the single ACPMs for sectors where there are close links between direct and indirect action projects and through the provision by the JRC of the project leader for a number of projects is advantageous to both the direct and indirect actions concerned and together with the technical assistance provided by the JRC under Line E6 of the new programme represents a satisfactory balance.

The Commission has examined the possibility of allocating the complete management function for certain indirect actions to the JRC. This concept would involve the setting up of management teams at the JRC along the lines of systems used in certain Member States. The Commission has not thought it opportune to adopt this approach mainly because the JRC has all its available means deployed on its own important research tasks and has no reserve for such an additional work-load. The Commission, furthermore, considers that to add this type of function to the JRC would be a distraction from its main task and might result in less efficient management of both the JRC itself and the indirect action projects.

The Commission has accordingly concluded not to make radical changes to the present system. On the other hand, it wishes to draw the attention of the Council to the fact that the JRC is already involved in the management of those indirect action projects in specific sectors where the JRC is deeply involved with direct action projects. The Commission will continually review this situation and will ensure the scientific and management expertise

available in the JRC is brought to bear on the scientific research activities carried out through indirect action to the maximum degree consistent with the need to maintain the efficiency of the organization and management of the JRC itself.

References in regard to Community sectoral policies relevant to the selection of areas of foremost priority for Community R & D

ENERGY :

1. Energy Policy - Communication from the Commission to the European Council (31 March - 1 April 1980) COM(80)130 fin.
2. The Energy Programme of the European Communities - COM(79)527 fin.
3. Council Resolution of 22 July 1975 on the Technological Problems of Nuclear Safety - OJ C 185 of 14.8.75
4. Council Resolution of 18 February 1980 on the Implementation of a Community Plan of Action in the Field of Radioactive Waste - JO C 51/1 of 29.2.1980
5. Council Resolution of 18 February 1980 on the Reprocessing of Irradiated Nuclear Fuels - JO C 51/ of 29.2.1980
6. Council Resolution of 18 February 1980 on Fast Breeder Reactors JO C 51/ of 29.2.1980

RAW MATERIALS :

The Community's Supplies of Raw Materials (Communication from the Commission to the Council) - COM(75)50 of 5.2.1975

ENVIRONMENT :

1. Declaration of the Council of the European Communities and of the representations of the Governments of the Member States meeting in the Council of 22. November 1973 on the programme of action of the European Community on the Environment - JO C 112/1 of 20.12.1973
2. Resolution of the Council of the European Communities and of the representatives of the Governments of the Member States meeting within the Council of 17 May 1977 on the continuation and implementation of a European Community policy and action programme on the environment JO C 139 of 13.6.1977

AGRICULTURE :

Council Regulation nr 1728/74 of 27.6.1974 on agricultural research coordination - JO L 182/1 of 5.7.1974

INDUSTRY :

European Society faced with the challenge of New Information Technology (Communication of the Commission to Council) COM(79)650 of 26 November 1979
General Steel Objectives (1980-85) O.J. C232 of 4/10/76

ADVISORY COMMITTEES*

Sector	Policy Oriented Committees	Implementation Oriented Committees		
		Ind. and concert. Action	Direct Action	Others
General	GERD, CREST		General Advisory Council	
New Energies and Energy Conservat.	CREST-Energy	ACPM - Solar Energy ACPM - Hydrogen ACPM Geothermal E. ACPM Energy Cons. ACPM Systems Anal.	ACPM - High Temperature Mater.	
Nuclear Energy	Scientific and Technical Commit. Fast Reactor Coordinating Commit. Water Reactor Safety Research Co-ordination Group	ACPM - Treatment and Storage of Radioactive Waste ACPM - Reactor Safety ACPM - Plutonium recycling ACPM - Decommissioning ACPM - Radiation Protection	ACPM - HFR ACPM - METRE ACPM - Control of Fissile Materials ACPM - Plutonium fuels and Actinide Research	
Reaction	Advisory Committee for the Fusion Programme			
Resources	CREST - Raw Materials	ACPM - Primary Raw Materials ACPM - Urban and Industr. Waste Recycling ACPM - Uranium		

* Advisory bodies in the framework of the CECA Treaty are not included. COST advisory bodies are also not included.

Sector	Policy Oriented Committees	Implementation Oriented Committees		
		Ind. and concert. Action	Direct Action	Others
Agriculture	Standing Committee on Agricultural Research			Technical Programme Committees Scientific committee for Food
Environment		ACPM - Environment ACPM - Climatology COMAC - Water Micropolluants COMAC - Atmosph. pollutants COMAC - Sewage Sludge COMAC - Urban Concentrations		
Medicine	CREST - CRM	COMAC - Congenital abnormalities COMAC - Cellular ageing COMAC - Oxygenation COMAC - Thrombosis COMAC - Deafness COMAC - Perinatal Monitoring COMAC - Electrocardiography		
Competitive Economic Development	CORDI CREST - Data processing CREST - Training in data processing	COMAC - Foodstuffs ACPM - BCR	ACPM - Informatics	Advisory Committee for the management and coordination of data processing programmes Footwear Programme Management Council
Horizontal Activities	CREST - STIDC C E T I L CREST - Statistics	ACPM - FAST		Advisory Committee for Scientific and Technical Training

Table 1

COMMUNITY R&D APPROPRIATIONS DEVOTED TO PRIORITY SECTORS
AND AREAS OF FOREMOST PRIORITY WITHIN PRIORITY SECTORS
(1979 R&D BUDGET)

Priority sectors	Appropriations devoted to :		
	A. Priority sect. (% of total R&D budget)	B. Areas of foremost priority	
		(% of total R&D budget)	(% of col. A)
1. Energy	72,0	66,4	92,2
2. Raw Materials	2,3	2,3	100,0
3. Environment	8,4	8,3	98,8
4. Agriculture	1,1	1,1	100,0
5. Industrial Sectors	9,7	5,9	60,8
TOTAL 1+2+3+4+5	93,5	84,0	89,8
6. Other	6,5	16,0	
TOTAL (1979 R&D budget)	100,0	100,0	

INDIRECT AND CONCERTED ACTIONS

THE CURRENT SITUATION ON PROGRAMME DECISIONS

1. Long-term securing and resources

1.1. Energy

1.1.1. New forms of energy (5 programmes)1.1.2. Nuclear-energy fission

- Plutonium cycle and its safety
- Management and storage of radioactive waste
- Safety of thermal water reactors
- Decommissioning of nuclear power plants

1.1.3. Thermonuclear fusion
(included JET)1.1.4. Radiation protection

1.2. Resources

1.2.1. Raw materials

- Primary raw materials
- Uranium (extraction and exploitation)
- Urban and industrial waste recycling
- Paper and board recycling

2. Environment, health and quality of life

2.1. Environment

- Environmental protection
- Sewage sludge
- Atmospheric pollutants
- Organic micro-pollutants in water
- Climatology
- Town planning

2.2. Radiation protection2.3. Public health - Medical research

- Congenital abnormalities
 - Cellular ageing
 - Extracorporeal oxygenation
 - Thrombosis
 - Hearing
 - Perinatal monitoring
 - Electrocardiography
- } one programme

3. Economic development

3.1. Conventional technologies

- Foodstuffs

3.2. New technologies

- Biomolecular engineering

3.3. Support activities

- Community Bureau of Reference (BCR)

4. Prospective studies - Stimulation of R&D

- FAST
- Scientific and technical training

Total : 26 PROGRAMME DECISIONS

SITUATION AFTER GROUPING OF PROGRAMMES

1. Long-term securing and resources

1.1. Energy

1.1.1. New forms of energy1.1.2. Nuclear-energy fission1.1.3. Thermonuclear fusion
(included JET)1.1.4. Radiation protection

1.2. Resources

1.2.4. Raw materials

2. Environment, health and quality of life

2.1. Environment2.2. Radiation protection2.3. Public health - Medical research

3. Economic development

3.1. Conventional technologies

- Foodstuffs

3.2. New technologies

- Biomolecular engineering

3.3. Support activities

- Community Bureau of Reference (BCR)

4. Prospective studies - Stimulation of R&D

- FAST
- Scientific and technical training

Total : 12 PROGRAMME DECISIONS

	A. <u>INDIRECT AND CONCERNED ACTIONS</u>	B. <u>DIRECT ACTIONS</u>	C. <u>ECSC ACTIVITIES, AGRICULTURE, ACTIVITIES DERIVING FROM SECTORAL OR INDUSTRIAL ACTION PROGRAMMES, STID</u>
1. <u>LONG-TERM SECURING AND RESOURCES</u>			
1.1. <u>Energy</u>			
1.1.1. New forms of energy	<ul style="list-style-type: none"> - Solar energy - Geothermal energy - Utilization of hydrogen - Energy saving - Systems analysis 	<ul style="list-style-type: none"> - New forms of energy 	
1.1.2. Nuclear-energy fission	<ul style="list-style-type: none"> - Plutonium cycle and its safety - Management and storage of radioactive waste - Safety of thermal water reactors - Decommissioning of nuclear power plants 	<ul style="list-style-type: none"> - Nuclear safety and fuel cycle 	
1.1.3. Nuclear fusion	<ul style="list-style-type: none"> - Controlled thermonuclear fusion (included JET) 	<ul style="list-style-type: none"> - Nuclear fusion 	
1.1.4. Radiation protection (cf. 2.2.)			
1.1.5. Coal			<ul style="list-style-type: none"> - Mining technology - Upgrading of products
1.2. <u>Resources</u>			
1.2.1. Raw materials	<ul style="list-style-type: none"> - Primary raw materials - Uranium (extract. & exploit.) - Urban and industrial waste recycling - Paper and board recycling 		
1.2.2. Agriculture			<ul style="list-style-type: none"> - Joint programmes and coordination programme
2. <u>ENVIRONMENT, HEALTH AND QUALITY OF LIFE</u>			
2.1. <u>Environment</u>	<ul style="list-style-type: none"> - Environmental protection - Sewage sludge - Atmospheric pollutants - Organic micropollutants in water - Climatology - Town planning - Radiation protection 	<ul style="list-style-type: none"> - Environmental protection 	<ul style="list-style-type: none"> - Pollution in iron and steel - Control of pollution in iron and steel industry
2.2. <u>Health and safety</u>	<ul style="list-style-type: none"> - Congenital abnormalities - Cellular ageing - Extracorporeal oxygenation - Thrombosis - Hearing - Perinatal monitoring - Electrocardiography 		<ul style="list-style-type: none"> - Chronic respiratory diseases - Ergonomics and rehabilitation - Industrial hygiene in mines - Safety in mines
3. <u>ECONOMIC DEVELOPMENT</u>			
3.1. <u>Conventional technologies</u>	<ul style="list-style-type: none"> - Foodstuffs 		<ul style="list-style-type: none"> - Steel - Textiles - Footwear - Ceramics
3.2. <u>New technologies</u>			
3.2.1. Data processing		<ul style="list-style-type: none"> - Data processing 	<ul style="list-style-type: none"> - Data processing programmes (Research sector)
3.2.2. Bio-technology	<ul style="list-style-type: none"> - Biomolecular engineering 		
3.2.3. Remote sensing from aerospace		<ul style="list-style-type: none"> - Remote sensing from aerospace 	
3.3. <u>Support activities</u>	<ul style="list-style-type: none"> - BCR/Metrology 	<ul style="list-style-type: none"> - Nuclear measurements 	<ul style="list-style-type: none"> - Computer translation
4. <u>SCIENTIFIC & TECHNICAL INFORMATION & DOCUMENTATION</u>			<ul style="list-style-type: none"> - STID
5. <u>PROSPECTIVE STUDIES, PROGRAMMES FOR STIMULATING THE EFFECTIVENESS OF R&D</u>			
	<ul style="list-style-type: none"> - FAST - Scientific and technical training 		